UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

Cliff

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SUBJECT: Site Visit at Proteco, Tallaboa, P.R.

FROM: Phil Clappin, inspector
Hazardous Waste Compliance Branch Phil Clappin

TO: Joel Golumbek, Chief
NJ/Carib RCRA Compliance Section

Background

Because I was scheduled to be in Puerto Rico from January 29 to January 30, Ton Moy (project manager) and Joel Golumbek asked me to visit the Proteco site to determine if the groundwater wells located near the "oily waste" lagoon could be impacted by the solid waste landfilling operations. I also inspected the condition of the non-hazardous waste lagoon and run-on/run-off concerns for the lagoon.

Location and Description (see schematic)

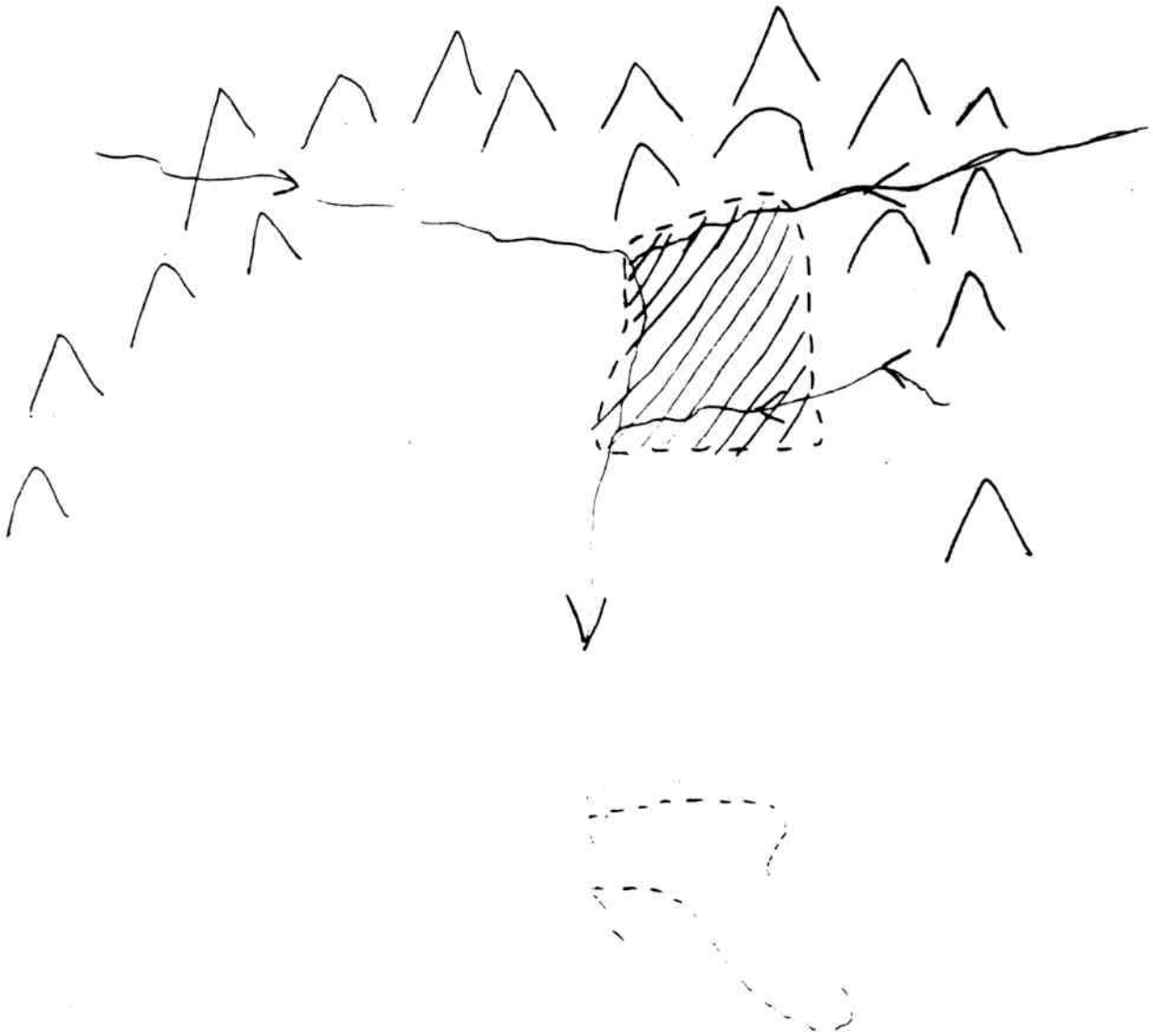
Proteco is located near the intersection of Puerto Rico Routes 2 and 127 in the town of Tallaboa, seven miles west of Ponce. The facility's office is located about 1 block north of Route 2, make a right on a dirt road and bear right. The facility itself is located about a mile up the winding, dirt road.

The facility is located within a mountain valley about three miles from the Caribbean Coast. It is situated at the confluence of two tributaries of an intermittent drainage channel which runs through the site. At times the streams overflow their banks and flood the land and the road making access to the area where the solid waste landfill is located very difficult. It is not known whether the valley is structurally controlled (fault, joint), related to differential erosion, or whether it was formed solely by the action of the surface water, but it definitely has been enhanced by surface water erosion. Previously, reports have been submitted by contractors which indicate that the soils are relatively impervious (10 to 10 cm/sec), but infiltration must be very high, because the facility representative indicated that by the time the stream flows down the hill leading from the facility it is only a trickle yet it could overflow its banks at the facility.

Personnel

I met and spoke with Ivelisse Estrada, Vice President and spoke with Rene Rodriquez, Environmental Manager, over the phone. Angel, probably the title that fits him best is crew chief, was the person who took me on the site tour. I was the only agency representative to go on the tour.

DRAINAGE PATTERN AT PROTECO



~~~ DRAINAGE

- - - - FACILITY BOUNDARY

//// WASTE HANDLING AREA

⌒ HILLS/MOUNTAINS
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Site Visit/Inspection

I arrived at the facility at about 8:45 to 9:00 A.M. on January 29, 1992. The weather was clear with some cumulus, fair weather clouds and a constant but gusting breeze. I waited in the office until someone from the facility on the hill was able to come and get me (about 15-20 minutes). Angel drove the van down the dirt road to pick me up and brought me up to the unit that I came to see.

The "new oily waste" lagoon was constructed within the area of the solid waste landfill which is in operation at the facility. Actually, it was created by only a backhoe or bulldozer as it is just a anthropogenic depression within the ground. It is located near or within the non-hazardous waste landfill. Its dimensions are 200 feet x 30 feet x 4 feet deep. There is no liner. About 30 feet of the unit was covered up by soil. Currently, only 12 inches to 16 inches of freeboard (eyeball measure - an approximation) was observed to be present. There were no precautionary measures taken to ensure that releases did not occur. No liner was present. No wells were nearby. No slurry wall was observed. Only an inadequate berm existed and it was obvious that this was overtopped. No secondary containment system was constructed. Waste level variations of these oily wastes within the pond was obvious as several lines were observed. The impoundment is about 10 (horizontal) feet from a 30 to 40 foot drop in elevation (cliff) in which a gully had been eroded. It is obvious, through the staining of soil within the gully, that at least some of the oily material had been released.

I asked how they used this unit. Angel, the facility representative, told me that they dug a hole using the large backhoe. Then they dispersed the oily liquids into the depression. They then mix non-hazardous liquid wastes, wait several days for evaporation and some biodegradation to occur, then mix with soil, stabilize and redistribute these oily soils into the non-hazardous landfill. Recently they have filled in 30 feet of this unit.

Curious as to know whether they thought that the variations in level of the wastes were due to infiltration, evaporation, release or all three, I asked Angel what caused the observed variations in the waste level within the pond. He indicated that it was evaporation. There was also some evidence of possible active biodegration as gas bubbles were being emitted.

I inquired of Angel whether he knew of the material that went into the surface impoundment. Obviously, it is black and has an oily viscosity and sheen but he did not know exactly where (the facility(ies)) it was from or what wastes went into the pond but did indicate that it was non-hazardous.

I noticed a gully to the west of this unit. I asked what happened to cause the gully. Angel indicated that a 10 inch rainfall occurred in a 24 hour period and the impoundment was overtopped. Water as well as the oily wastes were discharged through the gully. Therefore, a release of this material had occurred. It is not known whether Proteco has a contingency provision for such an event but it was obvious that a meager attempt was made to fill in the gully with soil.

From a high vantage point, I also noticed that the section of intermittent stream located near the road was being diverted. I asked if Proteco had a permit for this activity and the representative indicated that he did not know. I also noticed the drainage system throughout the valley in which the facility is located. It appears that the valley has been created by the erosion of the landscape by intermittent streams. The streams may be geologically structurally controlled but proof of this is lacking. To this inspector, investigations done by the facility and/or their contractor do not indicate the presence of any significant geological structures which control drainage. I did not notice any direct evidence for faults or zones of weakness. Based on my cursory inspection, it seems as though there is a possibility of structural control because of the trellised dendritic drainage system pattern. There may be a series of faults throughout the region which controls some of the drainage. If this is the case, permeability, infiltration, and groundwater movement may not be as low as originally thought. Flow of groundwater may be relegated to these zones of weakness. I don't know if appropriate testing of these areas for faults or other zones of weakness and/or dissolution has been done. Angel indicated that by the time the water in the stream flows underneath Route 2 (through a tunnel), most of it infiltrates into the soil. This may indicate that infiltration and permeability in the soil is greater than originally thought as a result of the studies already taken place. There is some doubt to the validity of these studies.

I also inquired as to a delivery of drums which Proteco received and placed in its non-hazardous waste landfill. Angel indicated that he did not know what was in the drums nor where the drums were from but that the office (Rene Rodriquez) would know. I asked if I could go over there and take a look at the drums. The representative said it would be Okay - so we both went. It was obvious that some of these were filled with non-regulated oil soaked rags, car radiators, small oily/greasy engine parts, small oily/greasy turbines, while others were filled with liquid material. Some of the containers had contained degreasers (F-solvents) but were RCRA empty. However, the small quantity of material that was in the bottom of the containers was released indiscrimenently and without regard. I pointed this out that these are highly toxic chemicals. Angel indicaed that we should not be there (probably because of exposure - but he did not say why) so we left. There were about 100 such drums in various

states of corrosion and disrepair in this shipment. Angel indicated by the end of the day these drums would be buried.

Recommendations and Further Actions

Upon viewing the site, I recommend that several actions be taken in the near future as follows:

(1) I recommend that more investigative work be done as far as the geology of the area. There seems to be some structural control to the drainage of the area of the facility which may also be the major migration route for groundwater. Perhaps a geophysical survey such as seismic might distinguish a plane of weakness.

(2) In terms of the new oily lagoon in the non-hazardous waste landfill, I have referred this case to SPCC. It is obvious that a release of this oily waste material which is being stored and mixed in the lagoon has occurred due to overtopping and erosion of the berm (if you could call it that) surrounding the unit. As far as I know, no work to investigate and cleanup the spill of this material was completed by the facility other than making temporary repairs to the resultant gully within the berm. The gully which was evidence of cliff erosion was not even filled in. A Spill Prevention and Protection plan may be necessary. Apparently, Proteco probably does not have such a plan and, if they do, it is either not adequate or they haven't implemented it after the release of this material.

(3) I have also referred this facility to the Marine and Wetlands Branch for the following two reasons: (1) They are diverting a watercourse, although intermittent, within their facility; (2) make a determination as to whether or not the facility is located within a wetland area.

> (1) Diversion of a watercourse requires a permit. I doubt that Proteco has obtained such a permit. When asked, the representative was not sure whether or not Proteco obtained a permit for this work. This was done to protect the access road (dirt) which leads from Rte. 127 to the landfill up the mountain. After heavy rains this road is often under water caused by the stream overflowing its banks.
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> (2) The fact that the streams in the area often overflow their banks may indicate that the facility is located within a floodplain. A floodplain may be considered a wetland under certain conditions, particularly if it supports certain vegetation types. If the facility is located in a wetland, any physical changes to the soil, any construction to be done, and any dumping of certain materials would either require a permit or not be permitted at all.

The Marine and Wetlands Branch should make a determination as to whether or not the facility is located in a wetland and whether or not they have the appropriate permits to conduct the work that they are doing.

(4) The main purpose of my visit to this facility was to determine if the wells present on site could be used to assess the following: (a) monitor releases from the hazardous waste oil lagoon; (b) run-on/run-off controls observed at the hazardous waste management area; and (c) whether or not the solid waste management activities encroach upon or overlie the hazardous waste management activities.

(a) It is virtually impossible to tell the direction of groundwater movement and whether or not the groundwater wells present on-site are monitoring releases from the hazardous waste oil lagoon if not some other hazardous waste unit on-site. They appear to be located fairly near the hazardous waste oil lagoon but not near enough for compliance monitoring. If the groundwater in these wells is sampled, tested, and results indicate the presence of hazardous waste constituents, it would be virtually impossible to determine if those releases were from the hazardous waste oil lagoon without further investigations. Considering the probable direction of groundwater flow, towards the coast, a groundwater plume from the hazardous waste oil lagoon might be detected within the wells present within the hazardous waste management area but it is not certain. I recommend that a waste analysis of the wastes that were placed into the hazardous waste oil lagoon should be undertaken and compared to the constituents that are being detected in the wells to ascertain if indeed these wells are monitoring the hazardous waste oil lagoon. Even then questions arise and the source of contamination is not definitive.

(b) Run-on/run-off controls within the hazardous waste management area of the facility are virtually non-existent. The hazardous waste oil lagoon contains a berm (approximately 2 feet high), however, that is the only noticeable run-on/run-off control measure. Because many of the hazardous waste units are located downgradient of the solid waste management area, there is a good possibility that run-off from the solid waste management area could impact the hazardous waste management area. In fact, a good example of this has just occurred with the release of the material from the new oily waste lagoon down the cliff separating the hazardous waste management area from the solid waste management area. It is possible that some encroachment of solid waste has already occurred onto the hazardous waste area but this is impossible to tell without direct sampling. The cliff consists of mainly unconsolidated soil probably the result of bulldozing of hills in the rear of the facility. They have been taking

soil from these hills for several years (at least as long as I have known) in order to bury the solid waste within the solid waste landfill. There are no run-on/run-off controls at many of the units nor onto the area of the facility where hazardous waste management had previously occurred prior to the termination of interim status.

(c) Expansion of the non-hazardous solid waste landfill operations towards the hazardous waste management area appears to be prohibited by the existence of a 30 to 40 foot cliff that separates the hazardous from the non-hazardous waste areas. Expansion of the non-hazardous waste landfill would most likely take place away from the hazardous waste management area, towards the east and the mountains/hills in back of the present facility. Recently, Proteco has already destroyed some of the hills which are proximal to the non-hazardous solid waste landfill.

cc. Ton Moy, HWCB
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Amy Chester, ORC